

SERVICE MANUAL

LW/MW/FM

Stereo Receiver

MODEL TA-3000L

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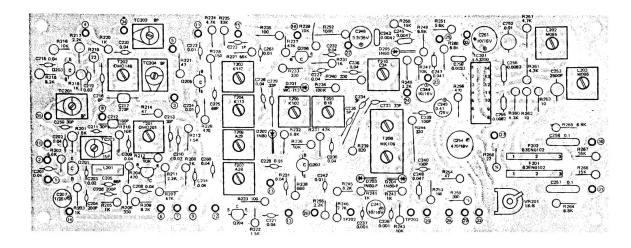
Switzerland:

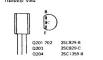
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Specifications are subject to change without notice.

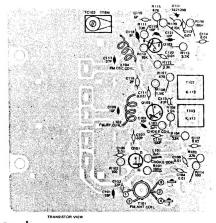
FAIM-3000L AM TUNER, AM FM IF, MPX P. C. BOARD





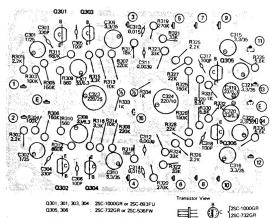


FMF-3000L FM TUNER P. C. BOARD



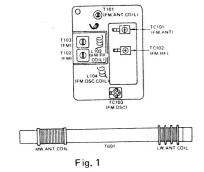


PRA-3000L PRE AMP. P. C. BOARD









2. Preparation of Adjustment

a. Function Switch

b. FM AFC Switch, FM Muting Switch See Fig. 2 c. Measuring Connection

: FM

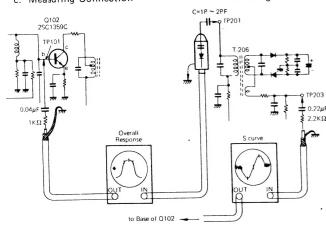


Fig. 2

3. Adjustment

Overall Response

a. Keep the secondary core of T206 drawn fully.

b. Adjust primary core of T102, T103, T203, T204, T205 and T206 to obtain the Overall Response as shown in Fig. 3-(a).

c. Make the Input Signal as small as possible not to fade out the wave with noise. The waveform should not change extremely with input level.

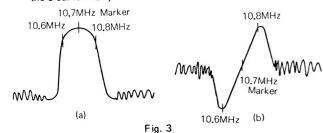
S Curve

a. Adjust the secondary core of T206, and set 10.7MHz Maker in the center of S curve. See Fig. 3-(b).

b. If the waveform is not proper, adjust slightly the primary core of T102 \sim T206.

c. When the above-mentioned adjustments get over, check again the Overall Response

If the wave is not fit, adjust T102 \sim T206 agian. And recheck the S curve finally.



AM IF Adjustment

1. Measuring Equipment Interscope for 455 kHz or 460 kHz

2. Measuring Conditions

a. Function Switch

Mechanical Center Position b. Treble, Bass

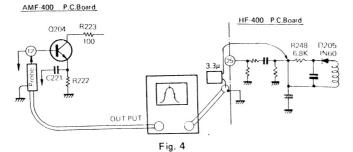
c. Position of V.C.

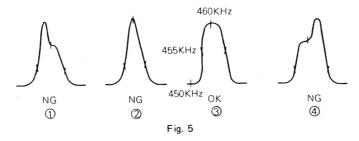
: Min. Capacitance

3. Adjustment

Connect AM IF Interscope as shown in Fig. 4. Adjust T207, T208, T209 and T210 to obtain the waveform as

shown in Fig. 5.





LW Tracking Adjustment

1. Measuring Conditions

: LW a. Function Switch Max. b. Volume

c. Treble, Bass

Mechanical Center Position 500 mW (2V) 8 ohm non-

d. Output g. Signal Generator (SSG) :

Inductive Load IRE Loop Antenna 400 Hz 30% Modulation

2. Adjusting Procedure

Set TC201 and TC203 in the center position.

Coverage

| Adjustment Step | 1 | 2 | |
|-----------------|------------------|------------------|--|
| Frequency (SG) | 145 kHz | 350 kHz | |
| V. C. Position | Max. Capacitance | Min. Capacitance | |
| Adjust Point | T201 | TC201 | |

Repeat step 1 and 2 several times. Move the pointer to left and right edge, and confirm that the coverage is 145 $\sim\!\!350\,\mathrm{kHz}.$

Tracking

| Adjustment Step | 1 | 2 |
|-----------------|-----------------|------------------------|
| Frequency (SSG) | 160kHz | 320 kHz |
| V. C. Position | 160 kHz | 320 kH z |
| | Tuning Position | Tuning Position |
| Adjust Point | T601 (LW) | TC201 |

Repeat step 1 and 2 several times. When step 1 and 2 match, adjustment of tuning circuit is finished. Fix T601 (LW) Coil with

AM Tracking Adjustment

Measuring Condition

: AM a. Function Switch

Set TC202, TC204 in the center position. Others are all same as LW Tracking.

| Adjustment Step | 1 | 2 | |
|-----------------|------------------|------------------|--|
| Frequency (SSG) | 510 kMz | 1630 kHz | |
| V. C. Position | Max. Capacitance | Min. Capacitance | |
| Adjust Position | T202 | TC204 | |

Tracking

| Adjustment Step | 1 | 2 |
|-----------------|----------------------------|-----------------------------|
| Frequency | 600 kHz | 1400 kHz |
| V. C. Position | 600 kHz Tuning Position | 1400 kHz Tuning Position |
| Adjust Position | T601 (MW) | TC-202 |

Repeat step 1 and 2 several times. When step 1 and 2 match, adjustment of tuning circuit is finished. Fix T601 (MW) Coil with

FM Tracking Adjustment

Preparation

Tight TC101 and TC102. Set TC203 to mechanical center. Squeeze L102 and L104.

Adjustment

Adjustment of Local Osc. Circuit.

| 1 | 2 |
|------------------|------------------|
| 87.4 MHz | 104.5 MHz |
| Max. Capacitance | Min. Capacitance |
| L104 | TC103 |
| | Max. Capacitance |

Repeat Step 1 and 2 several times.

Tracking

| Adjustment Step | 1 | 2 | |
|-------------------|----------------------------|----------------------------|--|
| Frequency (SSG) | 90 MHz | 102 MHz | |
| V. C. Position | 900 MHz Tuning Position | 102 MHz Tuning Position | |
| Adjust Position | T101, L102 | TC101, TC102 | |
| Aujust i Usitioni | 1101, 2102 | 1.0101,101 | |

Repeat step 1 and 2 several times. When step 1 and 2 match adjustment is finished.

FM Stereo (Separation Adjustment)

1. Condition

300 ohm Balanced Dummy Load FM Signal Generator : 98 MHz 1mV 60 dB Input.

Alignment should be done by small FM Multi Modulator

signal up to 1mV.

Set Condition

FM **Function Switch**

Adjustment Volume

Center Position Balance, Treble, Bass

OFF Loudness

STEREO Mode

2. Adjustment of Stereo Modulator

19 kHz Pilot Signal 7.5 kHz (10%)

L+R Main Signal 67.5 kHz (90%)

Before above modulation, adjust to 19 kHz Phase adjustment.

3. Adjustment Procedure

Set VR201 to the center position beforehand.

Separation Adjustment

After tune to max, output by the modulation signal of (L+R)+19 kHz, turn L203 to light Stereo Indicator. Then, set the modulation to (L-R)+19 kHz.

Turn L202 and L203 to max. output and min. distortion in L side. Set the modulation to L+19kHz, and observe the waveform. When there is nothing clipping or peaking distortion. Set the modulation to R+19 kHz.

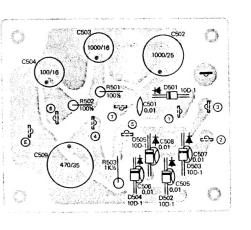
Adjust VR201 (1Kohm) to obtain min. waveform, then adjust for min. R side Output with L+19 kHz.

If the difference of separation between L and R over 6dB, adjust L203 finely.

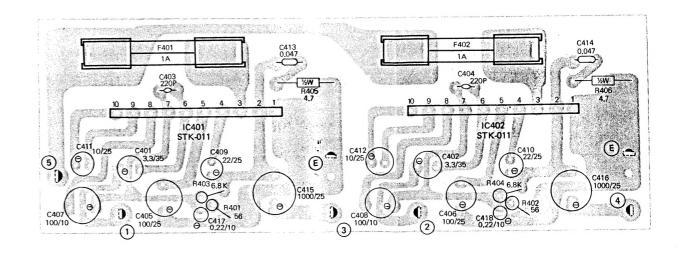
If there appears abnormal waveform in L side with L+19kHz, or if the separation becomes unbalance, readjustment of IF and checking of MPX circuit should be required.

After adjustment of separation, fix L202 and L203 with wax.

PS-3000L POWER SUPPLY P. C. BOARD

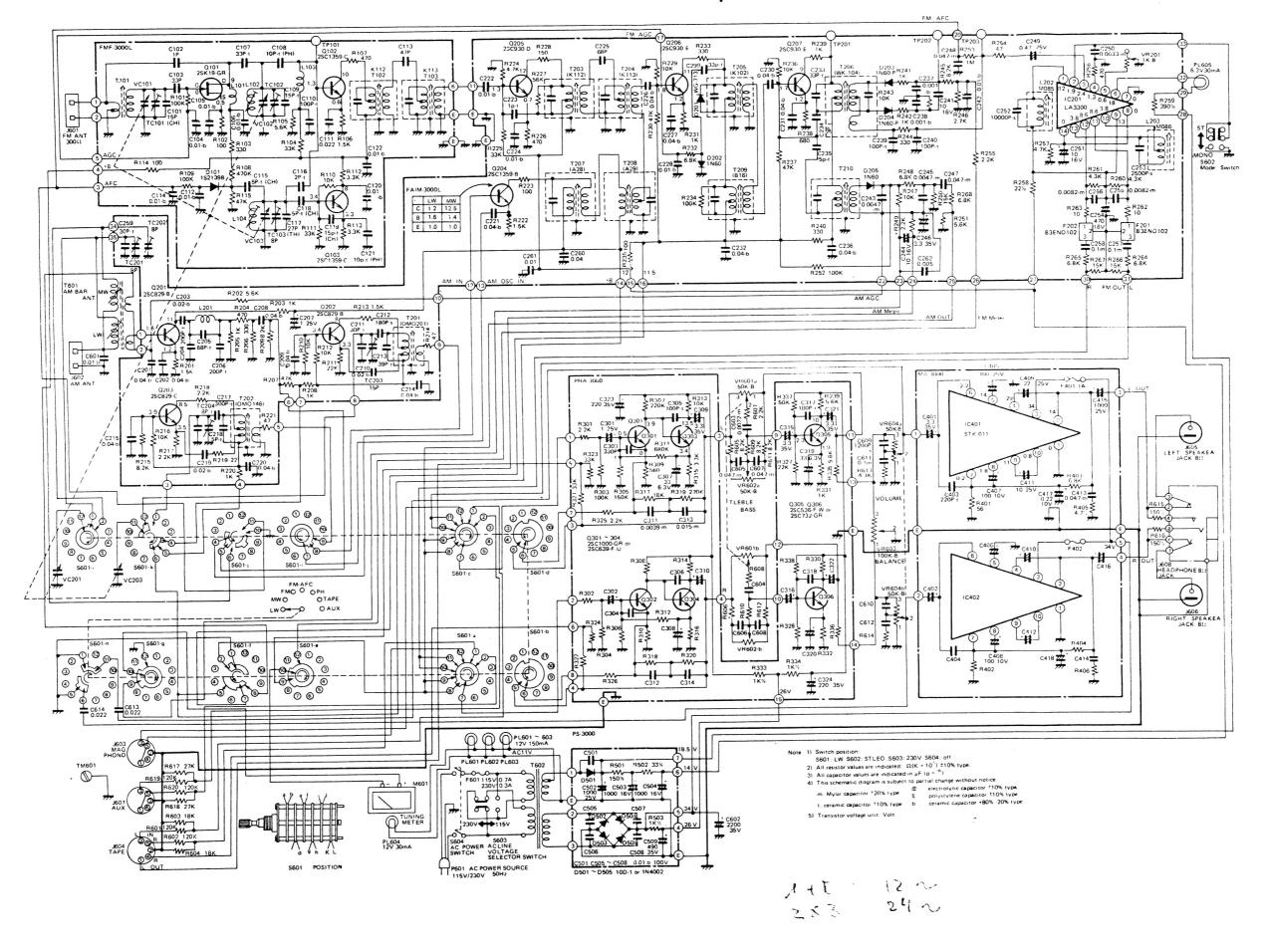


MA-3000L MAIN AMP. P. C. BOARD



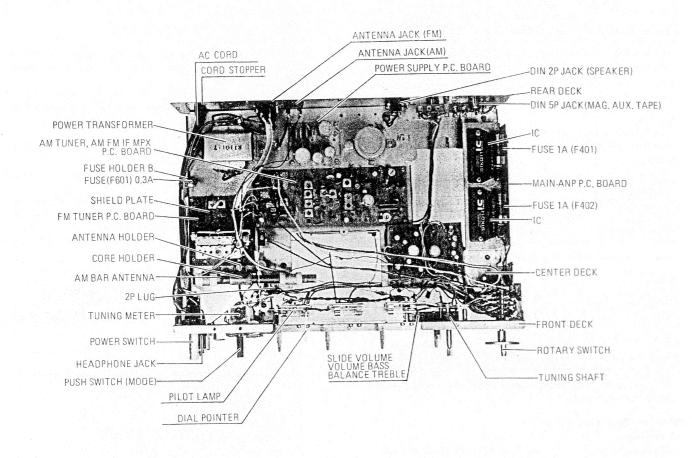


SCHEMATIC DIAGRAM

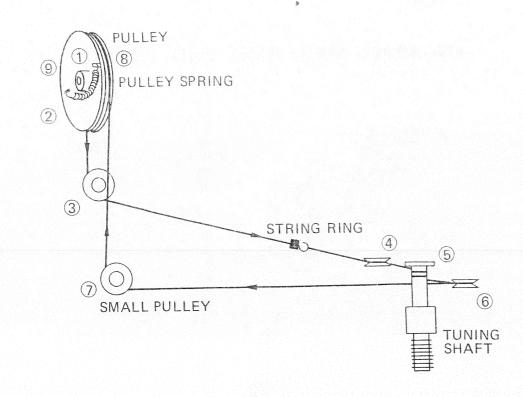


AM 7

PARTS LOCATION



DIAL STRINGING



MAIN PARTS LIST

| Ref. No. | Part No. | Description |
|------------|-------------------|------------------------------|
| A. Cabinet | | |
| | R811565 | Panel |
| | R636952 | Panel Plate |
| | R860679 | Dial Window |
| | R851477 | Volume Mask |
| | R871339 | Power Switch Knob No. 339 |
| | R871468 | Push Button |
| | R871353 | Slide Knob No. 353 |
| o Taasa It | R871340 | Tuning Knob No. 340 |
| | R871337 | Selector Switch Knob No. 337 |
| | R840588 | Cabinet |
| | R830555 | Rubber Foot |
| | R651711 | Shield Paper (with Cabinet) |
| | H650299 | Stopping Washer (Chassis) |
| B. Chassis | | |
| B. Chassis | 1 | |
| | H677054 | Small Pulley H |
| J608 | R439000 | Headphone Jack |
| S604 | R429043 | Power Switch 250V 4A |
| S602 | R429065 | Push Switch |
| VR603 | R361138 | Slide Volume (Balance) |
| | | 100 Kohm B |
| VR601 | R361139 | Slide Volume (Bass, treble) |
| | | 50 Kohm B |
| VR604 | R361140 | Slide Volume (Volume) |
| | | 50 Kohm x 2 with Tap |
| S601 | R421072 | Rotary Switch |
| | R671078 | Tuning Shaft |
| | R633058 | Fuse Holder |
| PL601, 603 | R411025 | Pilot Lamp 12V 0.15A |
| M601 | R590066 | Tuning Meter |
| | R700337 | Meter Holder |
| | H830004 | Dial Lamp Holder |
| PL604 | R411058 | Stereo Lamp 12V 85mA |
| | H677055 | Small Pulley J |
| | R860677 | Dial Plate |
| | R877099 | Dial Pointer |
| | H850105 | Dial Pointer Felt |
| | H770009 | Pulley Spring |
| | H700020 | Dial Stringing Ring |
| | R830574 | Cover Board A |
| | R830575 | Cover Board B |
| | R440095 | AC Cord |
| | R435007 | KEMA Plug |
| | R811071 | Cord Stopper D |
| | R851499 | Cord Stopper Spacer |
| | R439021 | Antenna Jack (FM) |
| | R439022 | Antenna Jack (AM) |
| | H425020 | Slide Switch |
| | R851469 | |
| | R438013 | |
| | R438012 | Din 5P Jack |
| | R921022 | GND Screw |
| | R436017 | 5P Lug |
| | R436017 | 4P Lug |
| | R436019 | |
| | | 2P Lug |
| | H677051 | Small Pulley E Fuse Holder |
| | R633234 | |
| | R633058 | |
| | | I AMERICAN PROPERTY |
| | R180298 R62653 | Core Holder |

| | Part No. | Description |
|--------------------------|----------------|---|
| F601 | R412030 | Fuse 0.7A |
| F601 | R412038 | Fuse 0.3A |
| | H810167 | Pulley |
| | R110147 | Power Transformer |
| | H850102 | Spacer |
| C. FM Tuner | P. C. Board (F | MF-3000L) |
| T102 | R15124 | FM IFT K112 |
| T103 | R15125 | FM IFT K113 |
| Q101 | | Transistor FCT 2SK-19GR |
| Q102, 103 | | Transistor 2SC1359-C |
| D101 | | Variable Capacitance Diode |
| | | IS2139B |
| D. AM Tuner | , AM FM IF, I | MPX P. C. Board (FAIM-3000L) |
| T201 | R160201 | LW OSC. Coil OMO201 |
| T202 | R160146 | MW OSC. Coil OMO146 |
| T203 | R15124 | FM IFT K112 |
| T204 | R15125 | FM IFT K113 |
| T205 | R15093 | FM IFT K102 |
| T206 | R15094 | FM IFT WK-104 |
| T207 T208 | R151071 | AM IFT A-28 AM IFT A-29 |
| T209 | R15122 | AM IFT B-16 |
| T210 | R151031 | AM IFT C-24 |
| L202 | R151085 | MPZ Coil M-085 |
| L203 | R151086 | MPX Coil M-086 |
| F201, 202 | R290011 | MPX Filter |
| IC201 | | I.C. SA3300 |
| 0201, 202 | | Transistor 2SC829-B |
| Q203 | | Transistor 2SC829-C |
| 0204 | | Transistor 2SC1359-B |
| Q205 | | Transistor 2SC930-D |
| Q206, 207 | | Transistor 2SC930-E |
| D201 | | Silicon Diode WG-713 |
| D203, 304 D203, 205 | | Germanium Diode 1N60P Germanium Diode 1N60 |
| VR201 | | Semi-Fixed Resistor 1 Kohm B |
| | P. C. Board (F | |
| | r. C. Doard (r | |
| Q301, 302 | | Transistor 2SC1000GR |
| 303, 304 0305, 306 | | or 2SC693-F-U Transistor 2SC732-GR |
| 0305, 300 | | or 2SC536-F-W |
| E 14.:. A14 | D D C D | |
| F. Wain AW | P. P. C. Board | d (MA-3000L) |
| IC401, 402 | | I.C. STK-011 |
| F401, 402 | | Fuse 1A |
| | pply P. C. Box | ard (PS-3000L) |
| G. Power Su | | Silicon Rectifier Diode |
| G. Power Su D501, 503 | | |
| | | 10D-1 or 1N4002 |